MCLAB
Molecular Cloning Laboratories

User Manual

Version 1.0
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Product name: Exonuclease III (E. coli)

Cat #: EIII-100, EIII-200, EIII-300, EIII-OEM

Description:
Exonuclease III (E. coli) is a 3′ -> 5′ exonuclease which acts by digesting one strand of a dsDNA duplex at a time or digesting the RNA strand of an RNA-DNA heteroduplex[1,2]. Exonuclease III (E. coli) breaks phosphodiester bonds on the 5′-side of AP sites in both dsDNA and ssDNA[3]. It removes 3′-terminal groups on dsDNA[3], increases MutY turnover[4], and efficiently degrades 3′-recessed but not 3′ protruding DNA ends (creating 5′-overhangs)[5]. Exonuclease III (E. coli) removes a limited number of nucleotides per binding event, resulting in coordinated progressive deletions within the population of DNA molecules[1].

Specific Activity: 150,000 U/mg

Application:
Degrades excess single-stranded primer oligonucleotide from a reaction mixture containing double-stranded extension products.

Source:
Purified from a strain of E. coli that expresses the recombinant Exonuclease III gene.

Supplied in:
25 mM Tris-HCL
50 mM KCl
1.0 mM DTT
0.1% MM EDTA
50% Glycerol
pH 8.0 @ 25°C

Supplied with: 10x Yellow Buffer

10x Yellow Buffer:
100 mM Bis-Tris-Propane
100 mM $MgCl_2$
10 mM Dithiothreitol
pH 7.0 @ 25°C

Unit Definition:
One unit is defined as the amount of enzyme required to produce 1 nmol of acid-soluble total nucleotide in 30 minutes at 37°C.

Recommended Storage Conditions: -20°C

Reference:

1. Linn, S. M. (1982) Nucleases, pp. 291-309, Cold Spring Harbor Laboratory Press.
2. Shida, T., et al. (1996) Nucl. Acids Res. 24 (22), 4572-4576.
3. Doetsch, P. W. (1990) Mutat. Res. 236 (2-3), 173-201.
4. Pope, M. A., et al. (2002) J. Biol. Chem. 277 (25), 22605-22615.
5. Henikoff, S. (1984) Gene 28, 351-359.